

Korean SBT longline fishery

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Introduction

Southern bluefin tuna (SBT) fishery is the most recently developed tuna fishery by Korean distant-water fishing industry since the early 1990s. The SBT catch made by Korean fleet reached a maximum in 1998, followed by continuous decrease until recent years. This was mainly due to the voluntary regulation of fleet size by Korean fishing companies to implement the resolution adopted by CCSBT before Korea joined CCSBT. The voluntary regulation of the fleet size at 16 vessels is effective until now, but the shift of these vessels from the Indian to the Pacific Ocean aiming to higher profit from fishery also contributed to the further decrease in catch of this species.

Catch and Effort

Fishing season of Korean SBT longline fishery usually starts in March and ends by November or December. Thus, fisheries statistics are collected and reported for a calendar year. In the first half of fishing season from March to July or August, usually Korean longliners are fishing on the high seas of the western Indian Ocean off South Africa, with occasional expanded operation to the southeastern Atlantic, while in the second half they move to the eastern Indian Ocean off the western Australia. This fishing pattern and fishing grounds have rarely been changed for the past 10 years of fishing history for SBT except for 1991, but in 2002 some catches were also taken from the western fishing grounds until October.

In 2002, 10 out of 16 registered longliners fished for SBT and made a catch of 649 mt (reported as processed weight) of SBT in the usual fishing area, showing a decrease by about 18% from 2001 figure. This may be due to the decrease in fishing efforts (i.e. months) of some longliners. Longline catches in the SBT fishing grounds consisted of about 90% of SBT and 10% of non-target species including yellowfin, bigeye, albacore, swordfish and others.

Nominal CPUE

Catch per unit effort of Korean longline fishery for SBT has shown a decreasing trend from a peak at 8.4 fish/1,000 hooks in 1994. However, CPUE appeared to be more or less stable between 2.3 and 4.1 fish/1,000 hooks in recent years. CPUE in 2002 increased compared with that of 2001. It was noted from the monthly CPUE analyses that catch efficiency is higher from the western fishing ground, 2.7-5.6 fish/1,000 hooks than the eastern ground, 1.8-2.8 fish/1,000 hooks.

Size composition

Fishermen on board have routinely collected size of SBT but the data should be used with caution due to relatively small sample size and no validation procedure. Size of SBT caught by Korean longliners during the past 5 years ranges from 100 to 210cm FL with the average of 153cm and shows that SBT caught in the eastern area (162.3cm) were bigger than those in the western area (152.4cm).

Fleet size and distribution

Korean SBT fishery commenced in 1991 with a few longliners shifted from tropical waters where they targeted bigeye and yellowfin. Thus, in the early years of this fishery, SBT did not attract Korean fishing industry, but because of higher market price number of longliners rapidly increased to reach a maximum fleet size of 19 longliners in 1998. However, by the voluntary regulation of fleet size among fishing industries, annual fleet size for SBT fishery never exceeded 16 registered number since then which resulted in less catch than allocated quota of 1,140 mt in 2001 and 2002. Annual number of fishing vessels for SBT largely depends on Japanese market price and fishing condition on the fishing grounds.

Other relevant information

Observer program

The Ministry of Maritime Affairs and Fisheries (MOMAF) initiated fisheries observer program in 2002 to monitor Korean distant-water fisheries including those for tunas and to meet the requirements of regional fisheries bodies. At the initial stage, the size of observer program will be fairly small to cover only for the fisheries to be urgently implemented such as SBT longline fishery in CCSBT Convention Area but will be gradually developed to a

bigger scale to cover all required areas of fisheries.

The goal of the first stage of observer program development from 2002 to 2006 is to establish a domestic training system to educate national observers. In 2002, a total of 5 observer candidates received a trainship from Hawaii longline observer program provided by Pacific Island Area Office (PIAO), NOAA. Among those 5 trainees, two joined 2-months research survey on-board RV of NFRDI in 2003, as part of the on-board training practices that will be continued in 2004.

Table 1. Nominal Catch (mt) of southern bluefin tuna by the Korean longline fishery

Month	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Jan.	-	-	-	-	-	3	8	-	-	-
Feb.	-	-	-	-	-	15	1	-	-	1
Mar.	-	-	-	-	-	101	125	57	58	83
Apr.	-	-	-	-	-	191	180	68	81	113
May	-	-	-	-	-	106	116	65	58	90
Jun.	-	-	-	-	-	159	169	81	88	87
Jul.	-	-	-	-	-	226	193	91	37	67
Aug.	-	-	-	-	-	227	164	164	119	110
Sep.	-	-	-	-	-	169	87	186	96	78
Oct.	-	-	-	-	-	180	81	110	87	20
Nov.	-	-	-	-	-	130	92	86	80	-
Dec.	-	-	-	-	-	55	55	79	31	-
Total	80(1)	119(1)	317(3)	1,148 (8)	1,238 (14)	1,562 (19)	1,271 (16)	987 (13)	735 (10)	649 (10)

() number of longliners

- : No data

Data source : Ministry of Maritime Affairs and Fisheries (MOMAF)

Table 2. Catch (no. of fish), effort (no. of hooks) and CPUE (no. of fish /1,000 hooks) of southern bluefin tuna by the Korean longline fishery, 1993~ 2002

Month	Item	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Jan.	Catch	-	-	-	-	-	-	152			
	Effort							126,220			
	CPUE							1.2			
Feb.	Catch	-	-	-	6	-	197	-	1		
	Effort				6,003		44,720		75,240		
	CPUE				1.0		4.4		0.1		
Mar.	Catch	-	-	2,336	220	2,015	715	1,005	231	906	2,439
	Effort			130,775	75,244	417,469	264,372	200,552	71,061	167,288	689,365
	CPUE			17.9	2.9	4.8	2.7	5.0	3.3	1.0	3.5
Apr.	Catch	674	503	1,814	501	3,377	1,441	1,989	260	971	2,480
	Effort	85,200	60,480	172,228	96,164	686,783	405,594	397,563	87,840	323,922	690,345
	CPUE	7.9	8.3	10.5	5.2	4.9	3.6	5.0	3.0	2.4	3.6
May	Catch	186	337	584	582	2,794	327	1,065	146	687	1,451
	Effort	41,340	61,740	166,100	178,022	568,574	213,789	472,224	90,228	291,856	650,503
	CPUE	4.5	5.5	3.5	3.3	4.9	1.5	2.3	1.6	1.1	2.2
Jun.	Catch	144	120	213	303	2,170	1,251	2,274	274	829	2,092
	Effort	82,970	37,800	31,300	110,223	447,790	295,180	493,267	114,440	366,909	401,578
	CPUE	1.7	3.2	6.8	2.7	4.8	4.2	4.6	2.4	2.5	2.8
Jul.	Catch	65	421	190	1,125	4,812	1,753	1,560	614	496	2,395
	Effort	35,740	72,270	47,104	164,267	594,640	265,680	206,830	128,310	157,558	598,793
	CPUE	1.8	5.8	4.0	6.8	8.1	6.6	7.5	4.8	0.9	4.4
Aug.	Catch	140	1,415	394	1,686	2,269	1,892	1,544	272	1,412	1,412
	Effort	58,870	67,740	67,204	171,195	415,836	350,650	493,878	164,509	532,332	532,332
	CPUE	2.4	20.9	5.9	9.8	5.5	5.4	3.1	1.7	0.5	4.0
Sep.	Catch	22	674	487	258	1,031	824	580	960	987	2,309
	Effort	24,710	45,344	191,845	56,320	537,920	306,050	471,730	265,267	473,548	703,394
	CPUE	0.9	14.9	2.5	4.6	1.9	2.7	1.2	3.6	0.6	3.3
Oct.	Catch	-	87	77	669	1,049	397	140	252	840	408
	Effort		40,120	61,542	287,645	516,846	246,550	167,221	183,500	494,814	257,035
	CPUE		2.2	1.3	2.3	2.0	1.6	0.8	1.4	1.7	1.6
Nov.	Catch	-	138	250	377	645	515	341	197	663	
	Effort		56,161	214,928	259,522	557,407	273,240	256,800	184,579	360,302	
	CPUE		2.5	1.2	1.5	1.2	1.9	1.3	1.1	2.3	
Dec.	Catch	-	-	47	76	235	350	189	60	337	
	Effort			33,920	64,700	198,508	214,820	165,826	80,675	123,769	
	CPUE			1.4	1.2	1.2	1.6	1.1	0.7	0.4	
Total	Catch	1,231	3,695	6,392	5,803	20,397	9,662	10,839	3267	8,218	10,854
	Effort	328,830	441,655	1,116,946	1,469,305	4,941,773	2,880,645	3,452,111	1,445,649	3,292,298	3,423,289
	CPUE	3.7	8.4	5.7	3.9	4.1	3.4	3.1	2.3	2.5	3.2

- : No data

Data source : National Fisheries Research and Development Institute (NFRDI)

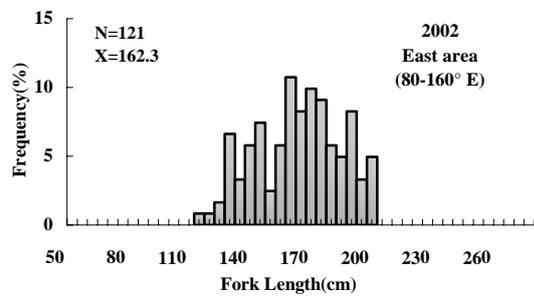
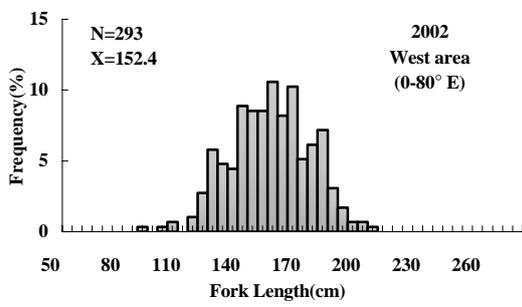
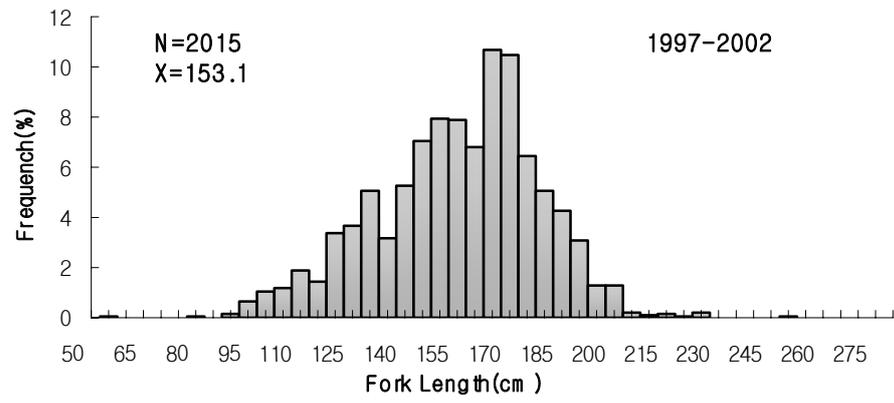


Fig. 1. Length frequency distribution of southern bluefin tuna caught by Korean longliners